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Introduction

The Council on Competitiveness is the only group of corporate CEOs, university presidents and labor leaders committed to the future prosperity of all Americans and enhanced U.S. competitiveness in the global economy through the creation of high-value economic activity in the United States. A nonpartisan, nongovernmental organization in Washington, D.C., the Council shapes the debate on competitiveness by bringing together business, labor, academic and government leaders to evaluate economic challenges and opportunities.

The Council greatly appreciates this opportunity to provide input during the development of the Networking and Information Technology Research and Development (NITRD) program's next Five-Year Strategic Plan. As we have seen so often in the past, sustained and coordinated federal government support for fundamental research in networking and information technologies (NITs) frequently seeds the innovations and innovation platforms (e.g., the Internet) of tomorrow. Government programs and partnerships with industry are also key competitiveness mechanisms for allowing U.S. companies to maintain leadership positions in NIT.

Building on Valuable Past Work

Given the competitiveness value of a number of the research priorities from the program's most recent five-year plan,¹ the Council hopes that the following areas will continue as part of the next iteration of the plan currently under development:

- **Compact, teraops-scale supercomputing systems.** Advanced computing capabilities are a central component to U.S. innovation, especially as that computing power becomes more mainstream (or "trickles down") and can be accessed by U.S. companies either through partnership programs with universities and government labs or directly by purchasing from vendors.

¹ See http://www.nitrd.gov/pubs/strategic_plans/2002_2006_NITRD_Strategic_Plan.pdf.

- **Reliable, universally accessible high-speed networks.** Just as access to high-speed networks have enabled many of the technological innovations seen in the last decade, even faster, next-generation networks will no doubt enable tomorrow's innovations, making leadership in networking a key U.S. competitive advantage.
- **Social, economic, and workforce implications of IT.** The more we understand about technology's role in supporting the strength of the U.S. economy and workforce, the better able U.S. companies will be in the future to take advantage of new technologies to enhance our overall global competitiveness.

New Areas of Focus

In addition to furthering the existing priorities mentioned above, the Council also feels that continued, coordinated, multi-agency research and development efforts in the following focus areas would also be most beneficial for U.S. economic competitiveness:

- **Government/industry partnerships.** The Council sees great value in new and continued support for programs (like the Department of Energy's INCITE program) that allow partnerships between government and industry—partnerships which Council research shows have been successful and have added to the global competitiveness of U.S. companies.
- **Advanced software research.** As computing hardware performance continues to improve and the shift toward multicore architectures continues, significant advances will be needed in software tools, programming languages, parallel processing, and related education and training to allow U.S. developers and companies to leverage this growing computing power for innovation and economic growth.
- **Computational expertise.** America clearly has the technological edge today—indeed, the most powerful computing systems in the world are in the United States. But America lacks sufficient numbers of computational scientists and engineers to fully exploit this leadership position. According to Council surveys, the biggest single constraint on the deployment of advanced computation tools is the lack of computational scientists. For this reason, NITRD support for a multi-agency program to increase the number of U.S. computational scientists would be a sound investment for the nation.

Information technology continues to play a critical role in our future prosperity and in maintaining the strength of our nation's economy. Thank you again for this opportunity to contribute to the development of NITRD's next five-year strategic plan. We hope that our expertise will help you guide the coordinated information technology R&D efforts of participating agencies.